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# Rubella on the Increase in the United States

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Although there is a vaccine to prevent rubella, the disease remains a problem within the United States. Therefore, providers must be ever vigilant when seeing a rash illness.

An RNA virus causes rubella. It is a mild febrile disease characterized by a maculopapular rash that begins on the head and moves rapidly to the trunk. The rash, which is pink in color, is small with fine discrete spots. Children may present with few or no constitutional symptoms. Adults may experience a 1–5 day prodrome consisting of low-grade fever, headache, mild coryza and conjunctivitis. The most characteristic clinical feature is lymphadenopathy, which precedes the rash by 5–10 days. The incubation period is usually 16–18 days. Rubella can be transmitted from one week prior to at least four days after the onset of rash.

Testing for rubella is recommended when diagnosing the disease. Serology for IgM antibody is the recommended test, and should be drawn 3–5 days after rash onset and sent to the Missouri State Public Health Laboratory in Jefferson City. Local public health agencies can provide assistance with testing.

The main health concern related to rubella is the ocurrence of intrauterine death, spontaneous abortion, and congenital rubella syndrome (CRS) in infants born to women who were not immune and who acquired infection with rubella virus during pregnancy. CRS can occur in 90 percent of infants born to women who were infected during their first trimester of pregnancy.

In 1999, two cases of rubella were reported in Missouri; two cases were also reported in 1998. The 1999 cases occurred in the young Hispanic male population migrating from Mexico. Both cases worked in the meat and poultry processing industry. The two cases in 1999 were linked to cases reported in surrounding states.

Missouri was more fortunate in 1999 than its neighboring states of Nebraska and Iowa. As of week 42, 87 rubella cases were reported in Nebraska. Seven of the 87 were in women who were pregnant. One stillbirth has been linked to these cases. As of week 50, 30 rubella cases were reported in Iowa. The majority of these cases were in the Hispanic population, and worked in the meat and poultry industry.

Mexico began immunizing infants and children against rubella in 1998. As of week 45, the number of rubella cases reported in Mexico was 18,248. This number is much lower than 1998, when 49,704 rubella cases were reported.

The Missouri Department of Health has sent information to all major meat and poultry processing plants in Missouri to inform them of the possible risk of rubella. The department asked for their assistance in screening for rash illness and in reporting the illness to their local public health agencies.

Susan E. Reef, M.D., of the federal Centers for Disease Control and Prevention, recommends the following actions to prevent rubella, and the subsequent tragic consequences of CRS:

### Vaccinate Persons Who Do Not Have Documented Proof of Immunity to Rubella

In the United States, children should receive the first dose of MMR at age 12–15 months, and the second dose at 4–6 years of age. Persons who are born after 1957 and who do not have a medical contraindication should receive at least one dose of MMR vaccine unless they have documentation of vaccination with at least one dose of measles-, rubella-, and mumps-containing vaccine.

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### Make Sure Your Foreign-Born Patients Are Vaccinated

Rubella and CRS are at record low levels in the United States, primarily due to the success of the rubella vaccination program. However, rubella vaccination has only recently been introduced in many developing countries, and many foreign-born persons may not be immune to rubella.

### Think Rubella When You See Suspicious Rashes

Even though rubella is at record low levels, it can be introduced and spread in the United States. If someone presents with a rash illness that may be consistent with rubella or measles, a diagnosis of rubella or measles needs to be ruled out. Obtaining a measles- and rubella-specific IgM blood test from the individual is critical.

### Think CRS When You See Any Congenital Malformation Consistent With CRS

CRS is rare in the United States, however, it does occur. If an infant is born with ANY congenital malformation consistent with CRS, do not assume that a positive rubella titer drawn during pregnancy rules out CRS. If you suspect CRS, obtain a rubella-specific IgM blood test.

### Report All Cases of Rubella and CRS To Your Local or State Public Health Agency

Once a case of rubella or CRS has been identified, the local public health agency should be contacted immediately. All cases should be investigated and control measures implemented.

If you have questions about rubella disease, please call the Section of Vaccine-Preventable and Tuberculosis Disease Elimination at (800) 699-2313 or (573) 751-6133.

# Tuberculosis Awareness Fortnight March 12-25, 2000

The Missouri Department of Health Section of Vaccine-Preventable and Tuberculosis Disease Elimination along with the American Lung Associations of Eastern and Western Missouri recognize Tuberculosis Awareness Fortnight, March 12-25, 2000 and World TB Day on March 24, 2000.

Hospitals are encouraged to conduct tuberculosis grand rounds during this time. Physicians and health care providers are encouraged to participate by providing displays, educational materials and lectures to staff and clients on the importance of tuberculosis screening, prevention and treatment.

Grand rounds entitled "The New Guidelines for Treatment of Latent TB Infection" are being planned in the Kansas City area on March 17 at St. Luke's Hospital of Kansas City at 7:45 a.m. and at the University of Missouri-Kansas City School of Medicine at 12:00 noon. The speaker at both sites will be John Jereb, M.D., from the Centers for Disease Control and Prevention, the Division of TB Elimination. For more information on the grand rounds, call the American Lung Association of Western Missouri at (816) 842-5242.

The American Lung Association of Eastern Missouri will provide tuberculosis educational materials and speakers upon request. Call (314) 645-5505 for more information.

If you are interested in additional information or would like some literature on tuberculosis, please contact:

**Section of Vaccine-Preventable and Tuberculosis Disease Elimination**
**(800) 611-2912**

# Rotavirus Vaccine—Intussusception Investigation in Missouri

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On August 31, 1998, the Food and Drug Administration (FDA) licensed a tetravalent rhesus-based rotavirus vaccine (RRV-TV), trade name, RotaShield®*, manufactured by Wyeth-Lederle Vaccines, for use among infants. As of June 13, 1999, 13 cases of intussusception among recipients of RotaShield®* were reported to the Vaccine Adverse Events Reporting System (VAERS) from 7 states. VAERS is a passive surveillance system jointly operated by the FDA and the Centers for Disease Control and Prevention (CDC). Intussusception is a type of bowel obstruction where one segment of the bowel becomes enfolded within another segment. The condition is most common among young children, especially infants 4–10 months of age.

Of the 13 intussusception cases reported to VAERS, 11 (84.6%) developed intussusception following dose 1 of the three-dose RRV-TV series, and 10 of 13 (76.9%) developed symptoms within one week of receipt of the vaccine. Twelve (92.3%) of the 13 cases received other vaccines concurrently with RRV-TV. Diagnosis of intussusception was confirmed radiographically in all 13 cases. Seven (53.8%) required surgical reduction. All infants recovered.

Dates of onset of reported cases ranged from November 21, 1998 to May 16, 1999. The median age of the cases was 4 months (range 2–11 months). Eight (61.5%) cases were in males.

The background rate of intussusception among infants <12 months of age was 0.39 per 1,000 person-years in four Vaccine Safety Datalink (VSD) sites during the period 1991–1997 (CDC, unpublished data). Hospital discharge data (1991–1995) from New York State revealed a rate of 0.5 per 1,000 person-years, and a rate of 0.74 per 1,000 (1995–1996) was reported from the Northern California Kaiser Permanente study.[1]

There was no federal contract for purchase of the RRV-TV (RotaShield®*) vaccine by the states. As such, use of the vaccine was limited to the private sector, as well as to a few states that bought the vaccine with their own funds and in selected areas where Medicaid paid for the vaccine. In Missouri, the bulk of the vaccine distributed by the manufacturer was to St. Louis City, St. Louis County, and the Kansas City area, along with some distribution to the Springfield area, but very little elsewhere in the state.

Because reporting of adverse events following vaccination to VAERS is passive and incomplete[2], the actual number of cases of intussusception among recipients of RRV-TV was assumed to be greater. Data available as of June 30, 1999, neither established nor refuted an association between receipt of rotavirus vaccine and the development of intussusception, so additional studies were needed. In June 1999, CDC designed a case-control study to estimate the association between rotavirus vaccination and intussusception. The Missouri Department of Health (DOH) was approached to participate in this multi-state investigation since rotavirus vaccine was distributed in Missouri, and also since 2 of the 15 cases of intussusception following rotavirus vaccine administration reported to VAERS were from Missouri.

In Missouri, the hospital discharge database for 1993–1997 was reviewed to identify hospitals that had cases of intussusception in children under 1 year of age. Eleven hospitals in the state which had more than one case in the above time frame were identified and approached to participate in the investigation. The hospitals were: Bothwell Regional Health Center (Sedalia), Cardinal Glennon Children's Hospital (St. Louis), Children's Mercy Hospital (Kansas City), Cox Medical Center South (Springfield), Hannibal Regional Hospital (Hannibal), Heartland Regional Medical Center (St. Joseph), St. John's Mercy Medical Center (St. Louis), St. John's Regional Health Center (Springfield), St. Louis Children's Hospital (St. Louis), Southeast Missouri Hospital (Cape Girardeau) and the University of Missouri Health Sciences Center (Columbia).

The participating hospitals were asked to review their discharge databases to identify all records with an ICD-9 discharge diagnosis code of 560.0, and to search their radiology record-keeping system for CPT codes 74283 (barium enema for intussusception) and 44050 (reduction laparotomy for intussusception) in children aged 1–11 months (children born on or after April 1, 1998) and discharged between November 1, 1998–June 30, 1999. As a result of these activities, 12 cases which met the case definition were identified in Missouri in the following six hospitals: St. Louis Children's Hospital (4), Children's Mercy Hospital (3), Cardinal Glennon Children's Hospital (2), Cox Medical Center South (1), St. John's Mercy Medical Center (1), and St. John's Regional Health Center (1).

The medical records for each of the cases were reviewed on-site between July 15 and August 20, 1999. Data were recorded on the "Hospital Abstraction

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*Use of trade names and commercial sources is for identification only and does not imply endorsement by the Department of Health.

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Form" provided by CDC. Parent/guardian and health care/vaccination provider interviews were conducted for each of the cases identified. CDC provided the standardized pre-interview script, "Parent Intussusception Questionnaire" and "Provider Intussusception Questionnaire."

The following hospitals were identified as "Birth Hospitals" for the 12 cases: Barnes-Jewish Hospital (St. Louis), Cox Medical Center South (Springfield), Deaconess Medical Center–Central (St. Louis), DePaul Health Center (Bridgeton), North Kansas City Hospital (North Kansas City), Southeast Missouri Hospital (Cape Girardeau), St. Mary's Health Center (Richmond Heights) and Truman Medical Center–West (Kansas City) in Missouri. Three (25.0%) of the 12 cases were born outside of Missouri.

Four controls were selected for each case. Controls were selected from among those who were born in the same hospital as a case. Controls were matched by age (within seven days of the date of birth of the case).

The centralized electronic birth registry database in Missouri was utilized for identifying controls. Based on information on the date of birth and hospital of birth of each case, a list was generated of all children born on the same day and within seven days of the case's birth for each of the nine Missouri cases.

The control investigation and data collection started on August 5, 1999. Procedures and questionnaires used for parental and provider interviews and for ascertainment of vaccination histories, were identical to those used for the cases. The investigation in Missouri ended on September 8, 1999, when the last provider was interviewed.

In summary, 12 cases of intussusception meeting the case definition for the investigation were identified in Missouri among children born between April 1, 1998 and March 1, 1999. None of these 12 cases received the rotavirus vaccine. Nine (75.0%) of the 12 cases were born in Missouri hospitals. Controls were selected from among infants born in the same hospitals within seven days of the birth of the respective cases. Four controls for each case were needed for the investigation, for a total of 36 controls. Missouri completed 38 control investigations.

Out of the 38 controls investigated, only three (7.9%) had received three doses of the rotavirus vaccine, one (2.6%) received two doses, and one (2.6%) received only one dose of the vaccine. Including the 12 cases and the 38 controls, only 5 (10.0%) of the 50 infants investigated in Missouri had received one or more doses of rotavirus vaccine.

On October 22, 1999, the Advisory Committee on Immunization Practices (ACIP), after a review of scientific data from several sources, withdrew its recommendation that RRV-TV be administered at 2, 4 and 6 months of age. The results of the CDC study are reprinted below.

DOH expresses its gratitude and thanks to all the hospitals, providers and parents who participated in the investigation in Missouri.

**REFERENCES:**

1. Rennels MB, Parashar UD, Holman RC, Le CT, Chang HG, Glass RI. Lack of an apparent association between intussusception and wild or vaccine rotavirus infection. Pediatric Infect Dis J 1998;17:924–5.
2. Rosenthal S, Chen R. The reporting sensitivities of two passive surveillance systems for vaccine adverse events. Am J Public Health 1995; 85:1706–9.

# Withdrawal of Rotavirus Vaccine Recommendation

*Reprinted from the Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report, November 5, 1999, Vol. 48, No. 43.*

In July 1999, CDC recommended that health-care providers and parents postpone use of the rhesus rotavirus vaccine-tetravalent (RRV-TV) (RotaShield®*, Wyeth Laboratories, Inc., Marietta, Pennsylvania), for infants, at least until November 1999. This action was based on reports to the Vaccine Adverse Event Reporting System of intussusception (a type of bowel obstruction that occurs when the bowel folds in on itself) among 15 infants who received rotavirus vaccine. Also at that time, the manufacturer, in consultation with the Food and Drug Administration, voluntarily ceased further distribution of the vaccine.

On October 22, 1999, the Advisory Committee on Immunization Practices (ACIP), after a review of scientific data from several sources, concluded that intussusception occurs with significantly increased frequency in the first 1–2 weeks after vaccination with RRV-TV, particularly following the first dose. Therefore, ACIP no longer recommends vaccination of infants in the United States with RRV-TV and withdraws its recommendation that RRV-TV be administered at 2, 4, and 6 months of age. Children who received rotavirus vaccine before July and remain well are not now at increased risk for intussusception.

Rotavirus remains the cause of a substantial health burden for children in the United States. It accounts for 20–40 deaths annually, and >50,000 hospitalizations from severe diarrhea

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* Use of trade names and commercial sources is for identification only and does not imply endorsement by CDC or the U.S. Department of Health and Human Services.

# Recommendations Regarding the Use of Vaccines That Contain Thimerosal as a Preservative

*Reprinted from the Centers for Disease Control and Prevention (CDC) Morbidity and Mortality Weekly Report, November 5, 1999, Vol. 48, No. 43.*

On October 20, 1999, the Advisory Committee on Immunization Practices (ACIP) reviewed information about thimerosal in vaccines and received updates from CDC's National Immunization Program and several vaccine manufacturers on the current and anticipated availability of vaccines that do not contain thimerosal as a preservative. The review was prompted by a joint statement about thimerosal issued July 8, 1999, by the American Academy of Pediatrics (AAP) and the Public Health Service (PHS)[1] and a comparable statement released by the American Academy of Family Physicians.[2] These statements followed a Congressionally mandated Food and Drug Administration (FDA) review of mercury in drugs and food, which included a reassessment of the use of thimerosal in vaccines.

Thimerosal is a mercury-containing preservative that has been used as an additive in biologics and vaccines since the 1930s because it prevents bacterial and fungal contamination, particularly in multidose containers. Given the widely acknowledged value of reducing exposure to mercury, vaccine manufacturers, FDA, and other PHS agencies are collaborating to reduce the thimerosal content of vaccines or to replace them with formulations that do not contain thimerosal as a preservative as soon as possible without causing unnecessary disruptions in the vaccination system. FDA will expedite review of supplements to manufacturers' product license applications that present formulations for eliminating or reducing the mercury content of vaccines.

* Use of trade names and commercial sources is for identification only and does not imply endorsement by CDC or the U.S. Department of Health and Human Services.

## Hepatitis B, DTaP, and Hib Vaccines

A single-antigen, preservative-free hepatitis B vaccine (Recombivax HB®, Merck & Co., Inc., West Point, Pennsylvania)* was licensed on August 27, 1999, and a second hepatitis B vaccine (Engerix-B®, SmithKline Beecham Biologicals, Philadelphia, Pennsylvania) that is preservative-free is under consideration for licensure.[3] One manufacturer reported that the supply of its diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine that does not contain thimerosal as a preservative would be sufficient to meet any increased demand during the next year, and three other manufacturers are developing similar DTaP vaccines that could be licensed in the future. Multiple single-antigen *Haemophilus influenzae* type b (Hib) vaccines and the hepatitis B/Hib combination vaccine that do not contain thimerosal as a preservative are licensed, and the supply of these products is adequate to meet national needs.

The risk, if any, to infants from exposure to thimerosal is believed to be slight. The demonstrated risks for not vaccinating children far outweigh the theoretical risk for exposure to thimerosal-containing vaccines during the first 6 months of life.

Given the availability of vaccines that do not contain thimerosal as a preservative, the progress in developing such additional vaccines, and the absence of any recognized harm from exposure to thimerosal in vaccines, hepatitis B, DTaP, and Hib vaccines that contain thimerosal as a preservative can continue to be used in the routine infant schedule beginning at age 2 months along with monovalent or combination vaccines that do not contain thimerosal as a preservative.

Reported failures to vaccinate newborns at high risk for perinatal hepatitis B virus (HBV) transmission suggest that some institutions may have misinterpreted or improperly implemented the recommendations contained in the joint statement by the AAP and PHS—and subsequent clarification—to postpone hepatitis B vaccination only for newborns who are not at high risk.[1,3] Chronic HBV infection develops in approximately 90% of infants infected at birth; among chronically infected infants, the risk for premature death from HBV-related liver cancer or cirrhosis is approximately 25%.[4] All hospitals and pediatric care providers should ensure that newborn infants receive hepatitis B vaccine as recommended.[5] See Table 1. If the supply of single-antigen hepatitis B vaccines that do not contain thimerosal as a preservative is limited, the priority for its use should be to vaccinate newborn infants.[3]

## Influenza Vaccine

All influenza vaccines contain thimerosal; however, ACIP recommends no changes in the influenza vaccination guidelines, including those for children and pregnant women.[6] Evidence suggests that children with certain medical conditions (e.g., cardiopulmonary disease, including asthma) are at substantially increased risk for complications of influenza.[7,8] During the influenza season, rates of cardiopulmonary hospitalizations for otherwise healthy women in their second or third trimester of pregnancy are similar to that among persons aged greater than or equal to 65 years who do not have a chronic medical illness and for whom influenza vaccination is also recommended.[9] Pregnant women with chronic medical conditions are at higher risk and have a hospitalization rate more than two times greater than among

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pregnant women without other high-risk medical conditions. A substantial safety margin has been incorporated into the health guidance values for organic mercury exposure developed by the Agency for Toxic Substances and Disease Registry and other agencies.[10] ACIP concluded that the benefits of influenza vaccine outweigh the potential risks for thimerosal.

**Table 1. Recommendations for Hepatitis B Vaccination of Newborn Infants With Thimerosal-Containing Vaccines and Vaccines That Do Not Contain Thimerosal as a Preservative**

| Mother's HBsAg Status at Delivery | Recommendation |
|---|---|
| Positive or Unknown | Vaccinate at birth. Use vaccine that does not contain thimerosal as a preservative; if unavailable, use thimerosal-containing vaccine. |
| Negative | Vaccinate at birth or by age 2 months. At birth, use vaccine that does not contain thimerosal as a preservative. At 2 months of age, use either thimerosal-containing vaccine or vaccine that does not contain thimerosal as a preservative. |
| Negative-High-risk* | Same as "Negative" above, except thimerosal-containing vaccine can be administered at birth. |

* Populations or groups that have a high risk for early childhood hepatitis B virus (HBV) transmission, including Alaska Natives, Asian-Pacific Islanders, immigrant populations from countries in which HBV is of high or intermediate endemicity, and households with persons with chronic HBV infection.

**REFERENCES:**


1. CDC. Thimerosal in vaccines: a joint statement of the American Academy of Pediatrics and the Public Health Service. MMWR 1999;48:563–5.
2. American Academy of Family Physicians. Policy statement of the American Academy of Family Physicians on thimerosal in vaccines, July 8, 1999. Available at **http://www.aafp.org/policy/camp/20.html**.
3. CDC. Availability of hepatitis B vaccine that does not contain thimerosal as a preservative. MMWR 1999;48:780–2.
4. Margolis HS, Coleman PJ, Brown RE, Mast EE, Sheingold SH, Arevalo JA. Prevention of hepatitis B virus transmission by immunization: an economic analysis of current recommendations. JAMA 1995; 274:1201–8.
5. CDC. Hepatitis B virus: a comprehensive strategy for eliminating transmission in the United States through universal childhood vaccination: recommendations of the Immunization Practices Advisory Committee. MMWR 1991;40(no. RR-13).
6. CDC. Prevention and control of influenza: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 1999;48(no. RR-4):1–28.
7. Mullooly JP, Barker WH. Impact of type A influenza on children: a retrospective study. Am J Public Health 1982;72:1008–16.
8. Glezen WP, Taber LH, Frank AL, Gruber WC, Piedra PA. Influenza virus infections in infants. Pediatr Infect Dis J 1997;16:1065–8.
9. Neuzil KM, Reed GW, Mitchel EF, Simonsen L, Griffin MR. Impact of influenza on acute cardiopulmonary hospitalizations in pregnant women. Am J Epidemiol 1998;148:1094–102.
10. Agency for Toxic Substances and Disease Registry. Toxicological profile for mercury. Atlanta, Georgia: Agency for Toxic Substances and Disease Registry, 1999.


**If you have questions regarding the use of vaccines, please contact the Section of Vaccine-Preventable and Tuberculosis Disease Elimination at (800) 699-2313.**

# Disease Reporting

Cases of reportable diseases and conditions should be reported promptly to your local health department, or to the Missouri Department of Health at

**(800) 392-0272**
(during working hours)
or
**(573) 751-4674**
(after hours, weekends or holidays)

# Bioterrorism: A Brief Update For Missouri

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Because to date there have been no incidents of mass bioterrorism in Missouri, we can only imagine what might happen and plan accordingly. Realistic scenarios have been prepared and discussed for anthrax and smallpox.[1,2] If an event were perpetrated without warning it would most likely not be discovered until victims became ill.

One of the most difficult concepts to grasp is that there could be large numbers of victims for which no intervention would be possible. This could happen because by the time patients have symptoms (making it possible to ascertain that an outbreak is occurring), for many of the bioterrorism agents disease progression in victims would have reached the point where therapeutic interventions would no longer be effective. Therefore, one of the most important roles of the medical response is to maximize the number for whom intervention could prevent morbidity or mortality. This involves two categories of efforts: facilitating early detection and preparing a rapid response.

Since the published list of weaponized agents are rarely seen in clinical practice, most health providers are unfamiliar with their clinical presentations. Furthermore, if exposed persons had dispersed to different geographic areas since initial exposure, victims would seek medical care from different sources and valuable time could be lost before enough information became available to determine that an event had occurred.

To counteract these problems, each health care provider needs to be aware of the possibility of bioterrorism, have an understanding of the agents and their symptoms, and know whom to call if they encounter a patient or situation which raises their suspicions. There are an increasing number of articles in the medical literature on the specific biologic agents with potential for bioterrorism, along with their diagnosis and treatment.[3,4,5,6,7,8] The Association for Professionals in Infection Control and Epidemiology, Inc. (APIC) has also published a plan for bioterrorism that is available for hospitals to adapt.[9] This plan contains a good list of websites and other resources.

Epidemiologic clues that may signal a biologic or chemical terrorist attack are listed on page 10. It is interesting to note that in the well-known instance in Oregon[10], where mass illness was induced for political gain, none of these trigger elements would have been present, while the recent discoveries of Legionnaires' disease and hantavirus were made in situations where many of them were present. Vigilance combined with an ongoing scientific approach is essential in the investigation of every outbreak.

Many different sorts of health care institutions, such as 911 operators, poison control centers, emergency rooms, outpatient clinics and hospitals could help in the early detection of an event if there were systems in place for rapid reporting of irregularities. To facilitate increased surveillance, early detection requires that systems be developed to monitor other events which could be early warning signs of an outbreak: sales of pharmaceuticals, illness in wildlife[11] and agricultural or domesticated animals, and pathology in plants.

Since these systems are not currently in place, there is a need for the formation of new relationships, new surveillance methods, and new tools to house, monitor and interpret any information that might be collected from these sources. As general awareness about the threat of bioterrorism increases, these systems may become easier to develop, and in doing so there is opportunity to improve the entire public health infrastructure, and promote early discovery of routine outbreaks as well.

The second category of efforts relates to preparation for a rapid response. This would involve treatment of victims, prevention of secondary transmission to others, and determining as rapidly as possible who else may have been exposed in order to initiate prophylactic therapy to decrease morbidity and mortality among the exposed.

Many entities are preparing to assist with different parts of this response. By Presidential Directive, the Federal Bureau of Investigation (FBI) has been designated as the lead agency in any bioterrorism event. The FBI has initiated the National Domestic Preparedness Office (NDPO), web site: **http://www.fbi.gov/programs/ndpo/default.htm**, an agency with representatives from each of the federal agencies with major roles in disaster response: Department of Energy (DOE), Department of Defense (DOD), Federal Emergency Management Agency (FEMA), Health and Human Services (HHS), Environmental Protection Agency (EPA) and Department of Energy (DOE). The Federal Response Plan (FRP), web site: **http://www.fas.org:80/irp/offdocs/pdd39_frp.htm**, details the capabilities and roles of these agencies.

The U.S. Department of Health and Human Services (HHS) is the lead federal agency designated for the medical response. The HHS has established an Office of Emergency Preparedness, and the Centers for Disease Control and Prevention (CDC) has established an Office of Bioterrorism to coordinate planning activities at the federal level. Efforts are currently underway to develop long distance training modules for state and local health agencies so

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that every county in the country will have access to information on the detection of outbreaks and implementation of coordinated response.

World-renowned experts from the U.S. Army Medical Research Institute of Infectious Disease (USAMRIID), CDC, and other organizations presented a live, interactive three-day satellite broadcast entitled, "Biological Warfare and Terrorism—The Military and Public Health Response" in September 1999.[12] The purpose of the broadcast was to inform and educate health professionals about the proper medical response in the event of an intentional biological agent release. Information about the broadcast can be found at **http://www.biomedtraining.org/biomenu.htm**. Participant materials and a videotape of the broadcast are also available through this web site.

In Missouri, health care providers are encouraged to maintain an attitude of alertness for bioterrorism, and to call their local public health agency with any suspicions. The 24 hour number for the Missouri Department of Health is (573) 751-4674.

**REFERENCES:**


1. Bardi J. Aftermath of a hypothetical smallpox disaster. Emerg Infect Dis 1999;5(4):547–51, **http://www.cdc.gov/ncidod/eid/vol5no4/contents.htm**.
2. Bartlett JG. Applying lessons learned from anthrax case history to other scenarios. Emerg Infect Dis 1999; 5(4):561–63, **http://www.cdc.gov/ncidod/eid/vol5no4/contents.htm**.
3. Dixon TC, Meselson M, Guillemin J, et al. Anthrax. N Engl J Med 1999;341(11):815–26.
4. Frans DR, Jahrling PB, Friedlander AM, et al. Clinical recognition and management of patients exposed to biological warfare agents. J Am Med Assoc 1997;278:399–411.
5. Inglesby TV, Henderson DA, Bartlett JG, et al. Anthrax as a biological weapon; medical and public health management. J Am Med Assoc 1999;281:1735–45.
6. National Research Council. Chemical and biological terrorism: Research and development to improve civilian medical response. Washington DC: National Academy Press, 1999, **http://books.nap.edu/books/0309061954/html/index.html**.
7. Christopher GW, Cieslak TJ, Pavlin JA, Eitzen EM. Biological warfare—A historical perspective. JAMA 1997;278(5):412–17.
8. Henderson DA. The Looming threat of bioterrorism.Science 1999;283:1279–82
9. Association for Professionals in Infection Control and Epidemiology, Inc. (APIC). APIC/CDC bioterrorism readiness plan for healthcare facilities. Washington DC: APIC 1999, **http://www.apic.org/html/cat/bioplan.html**.
10. Torok TJ, Tauxe RV, Wise RP, Livengood JR, Sokolow R, Mauvais S, et al. A large community outbreak of salmonellosis caused by intentional contamination of restaurant salad bars. JAMA 1997; 278:389-95.
11. CDC. Update: West Nile virus encephalitis—New York, 1999. MMWR 1999;48(41):944–55, **http://www2.cdc.gov/mmwr/weekcvol.html**.
12. United States Army Medical Research Institute of Infectious Diseases. Biological warfare and terrorism: The military and public health response. Satellite Broadcast, September 1999, **http://www.biomedtraining.org/biomenu.htm**.


# Antibiotic Resistance

Antibiotic resistance occurs when bacteria that cause infection are not killed by the antibiotics taken to stop the infection. The bacteria survive and continue to multiply causing more harm. Widespread use of antibiotics promotes the spread of antibiotic resistance.

The Centers for Disease Control and Prevention (CDC) estimates that about 100 million courses of antibiotics are provided by office-based doctors each year. Approximately half of those are unnecessary; being prescribed for colds, coughs and other viral infections.

Smart use of antibiotics is the key to decreasing, or even reversing, the spread of resistance. Although the solution to the problem of antibiotic resistance is complex, we do know that when communities have decreased antibiotic use, they also have decreased resistance.

CDC's Division of Bacterial and Mycotic Diseases has launched a new web site dedicated to the prevention of antibiotic resistance. The site contains information about antibiotic resistance and offers educational materials to order. The site is located at **http://www.cdc.gov/ncidod/dbmd/antibioticresistance**.

# Clinical Characteristics of Critical Biologic Agents* - 7/1/99

| Disease | Inhalational Anthrax | Pneumonic plague | Tularemia | Smallpox | Botulism | Filoviruses (Maburg, Ebola) | Arenaviruses (Lassa, Junin, Sabia, Machupo, Guanarito) |
|---|---|---|---|---|---|---|---|
| **Signs & Symptoms** | Fever, malaise, cough, mild chest discomfort; possible short recovery phase then onset of dyspnea, diaphoresis, stridor, cyanosis, shock. Death 24-36 hours after onset of severe symptoms. Hemorrhagic meningitis in up to 50%. | High fever, chills, headache, hemoptysis, and toxemia, rapid progression to dyspnea, stridor, and cyanosis. Death from respiratory failure, shock, and bleeding. | Typhoidal — aerosol, gastrointestinal, & intradermal challenge. Fever, headache, malaise, chest discomfort, anorexia, non-productive cough. Pneumonia in 30-80%. Oculoglandular from inoculation of conjunctiva with periorbital edema. | Fever, back pain, vomiting, malaise, headache, rigors. Papules 2-3 days later, progressing to pustular vesicles. Abundant on face and extremities initially. | Ptosis, blurred vision, diplopia, generalized weakness, dizziness, dysarthria, dysphonia, dysphagia, followed by symmetrical descending flaccid paralysis and respiratory failure. | Fever, severe headache, malaise, myalgia, maculopapular rash day 5; progression to pharyngitis, hematemasis, melena, uncontrolled bleeding; shock/ death days 6-9 | Fever, malaise, myalgia, headache, N/V, pharyngitis, cough, retrosternal pain, bleeding, tremors of tongue and hands (Junin), shock, aseptic meningitis, coma, hearing loss in some |
| **Physical Exam** | Non-specific physical findings. | Rales, hemoptysis, purpura | No adenopathy with typhoidal illness | Papules, pustules, or scabs of similar stage, many on face/extremeties, palms/soles | No fever, patient alert, postural hypotension, pupils unreactive, normal sensation, variable muscle weakness | petechia, ecchymoses, conjunctivitis, uncontrolled bleeding | conjuntivitis, petechia, ecchymoses, flushing over head and upper torso |
| **Clinical Tests** | Serology, gram stain, culture, polymerase chain reaction (PCR); CXR - widened mediastinum. **Rarely pneumonia.** | Gram stain, culture, serum immunoassay for capsular antigen, PCR, immunohistochemical stains (IHC) | Serology, culture, PCR, IHC; CXR - pneumonia, mediastinal lymphadenopathy, or pleural effusion. | Guarnieri bodies on Giemsa or modified silver stain, virions on electron microscopy, PCR, viral isolation, IHC | Serology, toxin assays/anaerobic cultures of blood/ stool; electromyography studies | Serology, PCR, IHC, electrom microscopy (EM); elevated liver enzymes, thrombocytopenia | Serology, viral isolation, PCR, IHC; leukopenia, thrombocytopenia, proteinuria |
| **Key Differential Diagnosis** | Hantavirus pulmonary syndrome (HPS), Dissecting aortic aneurysm (no fever) | HPS, TB, community acquired pneumonia (CAP), meningococcemia rickettsioses | Atypical CAP, Q fever, Brucellosis | Varicella, vaccinia, monkeypox, cowpox, disseminated herpes zoster | Guillain Barre', myasthenis gravis, tick paralysis, Mg++ intoxication, organophosphate poisoning, polio | meningococcemia, malaria, typhus, leptospirosis, borreliosis, thrombotic thrombocytopenic purpura (TTP), rickettsiosis, hemolytic uremic syndrome (HUS), arenaviruses | leptospirosis, meningococcemia, malaria, typhus, borreliosis, rickettsiosis, TTP, HUS, filoviruses |
| **Incubation Period** | 1-6day [up to 45 day] | 2-3 day | 1- 10 day [average 3-5 day] | 7-17 day [average 12 day] | 1 - 5 day | 2-19 day [average 4-10 day] | 5-21 day Lassa; 7-16 day Sabia, Junin, Machupo, Guanarito |
| **Duration of Illness** | 3-5 day | 1-6 day | > 2 wks | 4 wks | Death 24-72 hour or respiratory support for months | days to weeks | 7-15 day |
| **Case Fatality** | ~ 100% if untreated | Usually fatal unless treated in 12-24 hour | 10-35% untreated | up to 30%; higher in flat-type or hemorrhagic disease | High mortality without respiratory support | >80% | 15-30% |
| **United States Epidemiology** | None | 2-3 cases/yr. mainly in SW US | 150 case/yr.; transmitted by ticks/deer flies or contact with infected animals | None | 30 cases/yr.; food intoxication, wound infections, or honey ingestion (infants) | none | none |

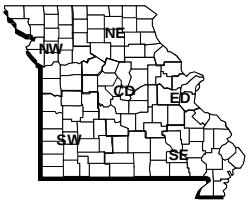
*Partial list developed by the federal government of potential agents of biological warfare and terrorism.

Source: United States Army Medical Research Institute of Infectious Diseases
Biological Warfare and Terrorism--The Military and Public Health Response
Satellite Broadcast Student Material, September 1999

# Epidemiologic Clues That May Signal Biologic or Chemical Terrorist Attack

1. Large numbers of ill persons with a similar disease or syndrome.
2. Large numbers of cases of unexplained diseases or deaths.
3. Unusual illness in a population (e.g., renal disease in a large population may suggest exposure to a toxic agent such as mercury).
4. Higher morbidity and mortality in association with a common disease or syndrome or failure of such patients to respond to usual therapy.
5. Single case of disease caused by an uncommon agent (i.e., *Burkholderia mallei* or *pseudomallei*, smallpox, viral hemorrhagic fever, pulmonary anthrax).
6. Several unusual or unexplained diseases coexisting in the same patient without any other explanation.
7. Disease with an unusual geographic or seasonal distribution (i.e., tularemia in a nonendemic area, influenza in the summer).
8. Illness that is unusual (or atypical) for a given population or age group (i.e., outbreak of measleslike rash in adults).
9. Unusual disease presentation, (i.e., pulmonary instead of cutaneous anthrax).
10. Similar genetic type among agents isolated from distinct sources at different times or locations.
11. Unusual, atypical, genetically engineered, or antiquated strain of an agent (or antibiotic resistance pattern).
12. Stable endemic disease with an unexplained increase in incidence (i.e., tularemia, plague).
13. Simultaneous clusters of similar illness in noncontiguous areas, domestic or foreign.
14. Atypical disease transmission through aerosols, food or water that suggests deliberate sabotage.
15. Ill persons who seek treatment at about the same time (point source with compressed epidemic curve).
16. No illness in persons who are not exposed to common ventilation systems (have separate closed ventilation systems) when illness is seen in persons in close proximity who have a common ventilation system.
17. Unusual pattern of death or illness among animals, (which may be unexplained or attributed to an agent of bioterrorism) that precedes or accompanies illness or death in humans.

Source: United States Army Medical Research Institute of Infectious Diseases Biological Warfare and Terrorism—The Military and Public Health Response Satellite Broadcast Student Material, September 1999[12]




Missouri Department of Health
Division of Environmental Health and Communicable Disease Prevention

# QUARTERLY DISEASE REPORT

Reporting Period*
**July - September, 1999**

| | Districts | | | | | | | | | | | 3 Month State Totals | | Cumulative | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CD | ** ED | NE | ** NW | SE | ** SW | *** OTHER | Kansas City | St. Louis City | St. Louis Co. | Spfd. Greene Co. | 1999 | 1998 | For 1999 | For 1998 | 5 YR MEDIAN |
| **Vaccine Preventable** | | | | | | | | | | | | | | | | |
| Influenza | 0 | 1 | 0 | 2 | 0 | 0 | | 0 | 0 | 0 | 0 | 3 | 1 | 828 | 1074 | 227 |
| Measles | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Mumps | 0 | 0 | 0 | 0 | 0 | 1 | | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 | 6 |
| Pertussis | 9 | 1 | 2 | 10 | 0 | 1 | | 12 | 2 | 2 | 0 | 39 | 12 | 54 | 28 | 35 |
| **Viral Hepatitis** | | | | | | | | | | | | | | | | |
| A | 7 | 18 | 2 | 13 | 27 | 18 | | 16 | 6 | 12 | 34 | 153 | 188 | 351 | 538 | 863 |
| B | 4 | 2 | 0 | 2 | 0 | 7 | | 8 | 1 | 6 | 7 | 37 | 61 | 128 | 186 | 259 |
| C | 0 | 13 | 0 | 0 | 0 | 2 | | 17 | 0 | 0 | 2 | 34 | 5 | 128 | 10 | n/a |
| Non-A Non-B | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 18 |
| Unspecified | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 |
| **Meningitis** | | | | | | | | | | | | | | | | |
| Meningococcal Disease | 1 | 6 | 0 | 3 | 1 | 0 | | 0 | 0 | 1 | 0 | 12 | 5 | 47 | 18 | 36 |
| Meningococcal Other | 0 | 3 | 0 | 2 | 0 | 0 | | 0 | 0 | 0 | 0 | 5 | 9 | 32 | 48 | 27 |
| **Enteric Infections** | | | | | | | | | | | | | | | | |
| Campylobacter | 24 | 22 | 8 | 31 | 17 | 30 | | 15 | 3 | 36 | 8 | 194 | 186 | 434 | 399 | 448 |
| E. Coli O157:H7 | 5 | 3 | 0 | 4 | 2 | 1 | | 0 | 1 | 6 | 2 | 24 | 25 | 41 | 37 | 37 |
| Salmonella | 54 | 42 | 13 | 24 | 35 | 28 | | 19 | 7 | 40 | 8 | 270 | 252 | 542 | 492 | 441 |
| Shigella | 20 | 54 | 1 | 4 | 2 | 43 | | 9 | 34 | 34 | 10 | 211 | 47 | 570 | 98 | 312 |
| **Parasitic Infections** | | | | | | | | | | | | | | | | |
| Cryptosporidiosis | 4 | 0 | 0 | 2 | 0 | 3 | | 2 | 0 | 0 | 5 | 16 | 12 | 23 | 20 | n/a |
| Giardiasis | 38 | 35 | 4 | 27 | 11 | 20 | | 11 | 17 | 48 | 6 | 217 | 287 | 505 | 562 | 543 |
| **Respiratory Diseases** | | | | | | | | | | | | | | | | |
| Legionellosis | 2 | 0 | 0 | 0 | 0 | 1 | | 1 | 0 | 2 | 0 | 6 | 6 | 13 | 14 | 13 |
| **Sexually Transmitted** | | | | | | | | | | | | | | | | |
| AIDS | 4 | 0 | 1 | 7 | 3 | 4 | 4 | 30 | 37 | 22 | 4 | 116 | 147 | 311 | 334 | 172 |
| HIV Infection | 8 | 1 | 0 | 6 | 2 | 2 | 0 | 20 | 45 | 22 | 0 | 106 | 103 | 323 | 310 | N/A |
| Chlamydia | 294 | 78 | 88 | 158 | 252 | 308 | | 897 | 607 | 403 | **** | 3085 | 3608 | 10044 | 9253 | N/A |
| Gonorrhea | 143 | 18 | 22 | 35 | 140 | 61 | | 719 | 583 | 338 | **** | 2059 | 2480 | 5609 | 6632 | 6315 |
| P & S syphilis | 1 | 0 | 0 | 0 | 6 | 0 | | 2 | 5 | 2 | **** | 16 | 24 | 66 | 81 | 91 |
| **Tuberculosis** | | | | | | | | | | | | | | | | |
| TB Disease | 2 | 1 | 0 | 0 | 5 | 1 | | 5 | 10 | 10 | 2 | 36 | 27 | 130 | 121 | 244 |
| TB Infections | N/A | N/A | N/A | N/A | N/A | N/A | | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Zoonotic** | | | | | | | | | | | | | | | | |
| Ehrlichiosis | 11 | 1 | 1 | 2 | 0 | 5 | | 0 | 0 | 2 | 1 | 23 | 10 | 26 | 10 | n/a |
| Lyme Disease | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 1 | 1 | 5 | 17 | 11 | 38 |
| Rabies (Animal) | 1 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 2 | 3 | 11 | 12 | 31 | 23 |
| Rocky Mountain Spotted Fever | 1 | 2 | 0 | 1 | 0 | 1 | | 0 | 0 | 0 | 1 | 6 | 2 | 14 | 4 | 14 |
| Tularemia | 4 | 0 | 1 | 1 | 1 | 3 | | 0 | 0 | 0 | 0 | 10 | 8 | 16 | 11 | 11 |

**Outbreaks**
Foodborne - 5
Waterborne -
Hepatitis A - 1
Legionellosis - 1
Salmonella - 1
Scabies - 3
Shigella - 2
Other -

**Low Frequency Vaccine Preventable Diseases**
Diphtheria
Hib Meningitis
Hib other invasive - 3
Polio
Rubella -
Tetanus

**Low Frequency Diseases**
Anthrax
Botulism -1
Brucellosis - 1
Chancroid
Cholera
Encephalitis
Granuloma Inguinale
Kawasaki Disease - 1
Leptospirosis - 1
Listeria - 4
Lymphogranuloma Venereum
Plague
Psittacosis
Rabies (human)
Reye syndrome
Rheumatic fever, acute
Streptococcal Disease, Invasive, Grp A - 5
Streptococcus pneumoniae,
Drug Resistant Invasive Disease
Toxic Shock Syndrome - 1
Trichinosis
Typhoid Fever

*Reporting Period Beginning June 27, 1999 and Ending October 2, 1999.
**Totals do not include Kansas City, St. Louis City, St. Louis County, or Springfield
***State and Federal Institutions
****Included in SW District
- Data unavailable

Due to data editing, totals may change

TEAR OUT FOR FUTURE REFERENCE

# St. Louis STD/HIV Prevention Training Center
# Winter/Spring 2000 Course Schedule

## FIBEROPTIC COURSES:

Fiberoptic courses are two-way audio and visual allowing for interaction between faculty and students.
Courses will be offered in the following:

Missouri cities: Columbia, Kansas City, Poplar Bluff, St. Louis and Springfield
Iowa cities: Cedar Rapids, Council Bluff, Davenport, Des Moines, Ottumwa and Sioux City.

### STD Laboratory Methods

This course is designed for both clinicians and laboratorians who perform basic laboratory procedures in support of STD clinical services. This course includes12 hours of lecture and 12 hours of supervised clinical practicum.
Course Dates: Feb 3, 10, 17 and 24, 2000
Course Time: 8:00 a.m.–12: 00 p.m.
Course Fee: $60. 24 hrs Category 1 CME, 28.8 Nursing Contact hrs.

### Viral Sexually Transmitted Diseases

This course is a comprehensive study of the diagnosis, management and treatment of the most common viral STDs. Topics include Herpes Simplex Virus, Human Papillomavirus, Hepatitis B and C and HIV. This course includes 6 hours of lecture and 8 hours of supervised clinical practicum.
Course Dates: March 2 and 9, 2000
Course Time: 8:30 a.m.–12: 00 p.m.
Course Fee: $40. 14 hrs Category 1 CME; 16.5 Nursing Contact hrs

### STD Clinician Course

This course, an intensive overview of STDs, includes 19 hours of lecture, 1 hour of case discussion and 24 hours supervised clinical practicum.
Course Dates: March 16, 23 and 30, April 6, 13 and 20, 2000
Course Time: 8:00 a.m.–12: 00 p.m.
Course Fee: $90. 44 hrs Category 1 CME, 52.8 Nursing Contact hrs.

### STD Update Course

This course provides up-to-date information on STDs including recommendations from the newly revised CDC STD Treatment Guidelines. This course includes 9 hours of lecture and 16 hours of supervised clinical practicum.
Course Dates: April 27, May 4 and 11, 2000
Course Time: 8:30 a.m.–12: 00 p.m.
Course Fee: $65. 25 hrs Category 1 CME, 30.0 Nursing Contact hrs.

## SATELLITE BROADCAST

### STD Grand Rounds Genital Dermatology

March 9, 2000, 12:00 p.m.–2: 00 p.m. CST
This program is offered at no cost to attend or downlink

For additional information on these courses please contact :

Dodie Rother
St. Louis STD/HIV Prevention Training Center
Washington University School of Medicine
660 So. Euclid
Campus Box 8051
St. Louis, MO 63110
Phone: 314 (747) 0294
Email: std/hiv@im.wustl.edu
Web site: **http://www.umsl.edu/services/itc/std_ptc.html**

# Missouri International Health Clinics - 1999

**The following is a list of international health clinics in Missouri as of December 1999:**

TEAR OUT FOR FUTURE REFERENCE

### Boone County

Elizabeth Allemann, MD
Travelers Health Center
1200 Fay Street
Columbia, MO 65203
Ph: (573) 443-7070

Thomas R. Cheek, MD
Fairview Clinic Internal Medicine
101 South Fairview
Columbia, MO 65203
Ph: (573) 882-4464

University of Missouri
Student Health Center
South 6th
Columbia, MO 65211
Ph: (573) 882-7481
Attn: Jackie
Students only by appointment

### Butler County

Kirby Turner, MD
Kneibert Clinic
686 Lester
P.O. Box 220
Poplar Bluff, MO 63902-0220
Ph: (573) 686-2411

### Clay County

Clay County Health Department
1940 - 152 Highway
Liberty, MO 64068
Ph: (816) 781-1601
Wed by appointment

### Cole County

Donald P. Miller, MD
Internal Medicine, Inc.
Jefferson City Medical Group
1241 W. Stadium Blvd, Div 2200
Jefferson City, MO 65109
Ph: (573) 635-5264

### Greene County

Stephen D. Christiansen, MD
Ozark Medical-Surgical
Associates, Ltd.
1900 South National, Suite 2800
Springfield, MO 65804
Ph: (417) 881-8819

Dennis N. Morrison, DO
Thomas J. Legg, DO
Leea Reed, DO
William L. McKay, DO
BIO-KINETIC Clinical Applications
1816 W. Mt.Vernon
Springfield, MO 65802
Ph: (417) 831-0456

Don S. Overend, MD
Lisa Ovens, MD
Jim Waterfield, MD
Richard T. Honderick, DO
Smith-Glynn-Callaway Clinic
3231 South National
Springfield, MO 65807-7396
Ph: (417/) 883-7422
Mon–Fri 8–5pm/Sat 8–12noon

Springfield-Greene County
Health Center
227 East Chestnut
Springfield, MO 65802
Ph: (417) 864-1686
By appointment only

### Harrison County

Hansa N. Patel, MD
Natu B. Patel, MD
Bethany Medical Clinic
Box 506, South 69 Highway
Bethany, MO 64424
Ph: (816) 425-3154

### Jackson County

Joseph H. Brewer, MD, FACP
Robert E. Neihart, M.D.
Paul M. Jost, M.D.
Plaza Internal Medicine
Infectious Disease, PC
4620 J.C. Nichols Parkway, Suite 415
Kansas City, MO 64112
Ph: (816) 531-1550

Allen J. Parmet, MD, MPH
Midwest Occupational Medicine
Union Hill Commons
3037 Main, Suite 201
Kansas City, MO 64108
Ph: (816) 561-3480

Joseph F. Waeckerle, MD
Albers Medical Inc.
440 Broadway, Suite 116
Kansas City MO 64111
Ph: (816) 931-0100

### Jasper County

Dennis Estep, DO, MPH,MS, FACOEM
Gary Brandon, DO, MPH,FACMP
Occumed
3201 McClelland Blvd.
Joplin MO 64804
Ph: (417) 626-3047

Joplin City Health Department
513 Kentucky Avenue
Joplin, MO 64801
Ph: (417) 623-6122
Thurs, 10 a.m. by appointment

### Jefferson County

John H. Krickbaum, MD
Hillsboro Medical Services
10661 Highway 21
Hillsboro, MO 63050
Ph: (314) 789-5809/5936

### Lincoln County

Asif Akhtar, MD
Troy Surgical Clinic
900 East Cherry St.
Troy, MO 63379
Ph: (314) 528-8585

### Randolph County

Dr. Robert Lancey
Health Service Clinic MACC
101 College Ave
Moberly MO 65270
Ph: (660) 263-4110 Ex. 209

### St. Louis City

BarnesCare
5000 Manchester (Midtown)
St. Louis, MO 63110
Ph: (314) 747-5800

BarnesCare
401 Pine Street (Downtown)
St. Louis, MO 63102
Ph: (314) 331-3000

David C. Campbell, MD, MEd
Family Medicine Program
Deaconess Hospital
6125 Clayton Avenue, Suite 222
St. Louis, MO 63139
Ph: (314) 768-3685

Dr. Steven Cummings, MD
Employee Health at St. Louis University
1310 South Grand
St. Louis, MO 63104
Ph: (314) 268-5499

Victoria Fraser, MD
Infectious Disease
Washington University
School of Medicine
660 South Euclid, Box 8051
St. Louis, MO 63110
Ph: (314) 362-4412

Dr. Ernest Bobby Kleier
Healthline Corporate Health Services
1617 South 3rd St
St. Louis, MO 63104
Ph: (314) 421-2557

Dr. Ernesto Lam
Healthline Corporate Health Services
2626 North Broadway
St. Louis, MO 63102
Ph: (314) 241-5804

Anne Nicolazzi, M.D.
HealthLine Corporate Health Services
1212 South Grand
St. Louis, MO 63104
Ph: (314) 577-8060

### St. Louis County

Barnes Care Traveler's Hlth. Service
11501 Page Service Road
St. Louis, MO 63146
Ph: (314) 993-3014
Mon–Fri, 8 a.m. to 4 p.m.

Dr. Vladimir Gelfand
Deaconess Medical Center
Clarkson Square Shopping Center
1751 Clarkson Road
Chesterfield, MO 63017
Ph: (314) 537-0377

Dr. Sharon Godar, MD, MPH
Monsanta World Head Quarters
A Medical Clinic
800 N. Lindbergh Blvd
St. Louis, MO 63167
Ph: (314) 694-2194

James H. Hinrichs, MD
Northwest Infectious Disease Services, LLC.
DePaul Professional Office Building
12277 DePaul Drive, Suite 201
Bridgeton, MO 63044-2585
Ph: (314) 344-7070

Edward F. Hendershot, MD
Northwest Infectious Disease Services, LLC.
11125 Dunn Road, Suite 412
St. Louis, MO 63136
Ph: (314) 355-7997

Shelby Kopp, M.D.
Healthline Corporate Health Services
83 Progress Parkway
Maryland Heights, MO 63043
Ph: (314) 436-9440

Paul B. L'Ecuyer, MD
Barnes West Medical Consultants
Professional Building #2, Suite 200
10 Barnes West Drive
St. Louis, MO 63141
Ph: (314) 434-8828

Farrin A. Manian, MD, MPH
David A. Janssen, MD
Adult Infectious Diseases
621 South New Ballas Road, Suite 3002
St. Louis, MO 63141
Ph: (314) 569-6171

Dr. Cheryl Patterson
Healthline Corporate Health Services
1709 Gilsinn Lane
Fenton, MO 63026
Ph: (314) 436-9440

St. Louis County Department
of Community Health
and Medical Practice
John C. Murphy Health Center
6065 Helen Avenue
Berkeley, MO 63134
Ph: (314) 854-6410 - Ext. 6321
Mon–Wed, 8 a.m.– 4 p.m.
Thurs, 8 a.m.–7 p.m.
St. Louis county residents only

Mary Trottier, MD, MPH
Monsanto Chesterfield
BB1B Medical
700 Chesterfield Parkway
St. Louis, MO 63198
Ph: (314) 737-6511

David E. Turner, MD, PhD
St. Louis Health Care Network Centre
Point Corporate Health Services
350 Village Square Drive, Suite 100
Hazelwood, MO 63042
Ph: (314) 731-8087

Trav-L-Med, Inc.
12818 Tesson Ferry Road, Suite 101
St. Louis, MO 63128
Ph: (314) 849-6611

Sheik Zahid, MD
Healthline Coporatie Health Services
7927 N Lindbergh
Hazelwood, MO 63042
Ph: (314) 831-8511

### Scott County

William Shell, MD
Ferguson Medical Group
1012 North Main Street
P.O. Box 1068
Sikeston, MO 63801-5097
Ph: (573) 471-0330

# Recommendations for International Travel

*Reprinted with permission from Mississippi State Department of Health Mississippi Morbidity Report, Vol. 17, No. 8, March 1999. Portions of article were modified to reflect Missouri Department of Health procedures.*

*Thomas J. Brooks, Jr., Ph.D., M.D.*
*Mississippi State Department of Health*

People travel to foreign countries for a variety of reasons including business opportunities, educational advancement, government service—including military assignment—and personal enjoyment. They remain abroad for lengths of time varying from a few hours to many years, and they live and/or work in every conceivable part of the globe under the whole spectrum of climatic conditions. The variety of human diseases and injuries encountered spans the whole of medical practice.

Foreign travel, therefore, cannot be conceived of as a single entity. If you are planning a one week trip organized by a reputable tour operator to western Europe, Japan, Australia and selected other areas you should have little to be concerned about more than you might have at home. If, on the other hand, you are contemplating a visit to—or residence in—an area or country where sanitation is poor, food and water are unsafe, disease is epidemic, no schools or books are available, no reliable means of communication exists, there are no medical facilities of any kind and the government is unstable, then you have much to be concerned about.

There are, however, certain things to which **everyone** should give careful consideration before leaving the United States whether for a short or long period of time.

The U. S. Department of State publishes vital, timely information on most countries of the world giving brief descriptions of the political, cultural and economic conditions extant. Especially useful are the travel warnings, since from time to time the Department of State declares that United States residents **may not** enter certain countries legally. Address: **http:// travel.state.gov/ travel_warnings. html**

In addition, the Centers for Disease Control and Prevention (CDC) publishes a Summary of Health Information for International Travel *(The Blue Sheet*), Health Information for International Travel *(The Yellow Book*) and a Summary of Sanitation Inspections of International Cruise Ships *(The Green Sheet*). It also lists international recommendations and requirements for vaccine administration, etc. Address: **http:// www.cdc.gov/travel/index/htm**. Or, you may contact one of Missouri's international health clinics (listed on pages 13–14) or the Section of Vaccine-Preventable and Tuberculosis Disease Elimination at (800) 699-2313 for the latest information on immunizations and vaccine availability. Be sure to allow time to complete all the immunizations you need.

The Missouri Department of Health provides travel-related information. Yellow fever vaccine is given only at the local health departments and private providers listed on pages 13–14. These international health clinics also offer immunizations for hepatitis A, typhoid fever, pre-exposure rabies, Japanese encephalitis, cholera, hepatitis B, plague and meningococcal vaccines or immunization globulin. If you need only routine immunizations before you travel or boosters such as Td, MMR, or polio, you may visit any local health department.

If you have not had a recent medical check-up, you should see your doctor to make certain that you are physically able to make the trip and to be sure that your immunizations are current for the country/countries to be visited.

In addition to immunizations, it should be determined well before departure whether or not the health/accident insurance in force at home will be acceptable in the country/countries, to be visited. If not, it may be wise to consider the purchase of trip insurance.

If you are taking any kind of prescription medication on a continuing basis, be certain that you have **more** than enough to last for the intended duration of the trip. Delays occur without warning, and certain medications may be difficult or impossible to obtain in the host country, and, if available, may be of questionable quality and safety.

If you wear eyeglasses or contact lenses, take along an extra pair, and if you require a special diet, make certain before you depart that it will be available.

Foreign travelers will experience varying degrees of exposure risks, depending upon where they go, the season of the year, etc. Persons going from the United States to Canada, western Europe, Australia, New Zealand and other selected areas generally have no increased risks. But the vast majority of the world's people do not live under sanitary conditions. In some locations, the facilities are extremely primitive or nonexistent, and a visitor may face life-threatening illness. The remarks and suggestions below should apply to some of the more primitive situations. The traveler should get the best possible advice prior to departure and, on arrival, should make a careful assessment of the actual dangers to health.

The vast majority of disease causing agents will be acquired in one of the following ways:

A. By eating or drinking something contaminated.

*(continued on page 16)*

*(continued from page 15)*

B. By being exposed to a contagious/ communicable disease.

C. By being bitten by a vector carrying a disease agent.

D. By some form of physical injury.

### A. Food and Drink

Water: The old adage to "**boil it, cook it, peel it, or forget it**" applies in many parts of the world.

1. The safest way to make contaminated water safe is to **boil** it yourself by whatever means are available.

2. Take along a canteen and give the waiter a few coins to bring it to you full of **boiling** water. If this is done in the evening, it may be packed away overnight and drunk the next day. Standard aluminum canteens are recommended, **not** galvanized steel.

3. If neither of the above is possible, consider drinking only from the hot water tap in the lavatory if there is one. Even if the water is not very hot it may be reasonably safe if it has been as hot as 140º F for 20 minutes or more and not recontaminated. Most hotels have some degree of hot water some time during the day.

4. If none of the above is available, almost any kind of beer is safer than unboiled water. Many brands, especially dutch and german are available in remote areas.

5. Most carbonated drinks have such a low pH that they may be effective in killing some viruses and bacteria.

**Myths, Misconceptions and Don't's:**

1. Many individuals believe that "bottled water" is always safe. It may be, but in many locations if you want it in a bottle someone will put it in a bottle for you. Always distrust it if the cap is not sealed.

2. Never drink anything with ice in it. The ice will be contaminated if the water is, and the alcohol in an alcoholic drink will **not** make it safe.

3. Chlorine and iodine "drops" or tablets are not to be relied upon to make contaminated water and vegetables safe. They are surely beneficial, but their effectiveness depends on their concentration and time, and heavily contaminated water would require large amounts of both.

4. In unsanitary situations, milk and all milk products should be avoided. Canned, condensed and powdered milk may be the exceptions, depending upon where and by whom they were processed.

**Food:** Travelers may encounter all levels of food sanitation, depending upon where they go, and no single rule of safety will apply to all. In selected countries it may be as safe (or even safer) than at home in the United States, but in other areas it may contain pathogens that are life threatening. In such situations, one should eat only thoroughly cooked foods served hot on plates that have not been washed in contaminated water. Fruit is usually safe if you peel it yourself.

### B. Contagious/Communicable Diseaes

The traveler should be concerned particularly with other persons who are sick, especially those with fever, and avoid them to the extent possible. You should be protected from those diseases against which you were immunized, but protection may not be 100%. In many countries, opportunities for sexual liaisons abound and **should be scrupulously avoided**.

**Diarrhea** is the common medical problem in returning travelers. If you get diarrhea while overseas, remember that dehydration is the most important thing to be concerned about with diarrhea. Be sure to drink plenty of fluids to counteract this. Mild symptoms may be countered with an over the counter (OTC) bulk agent, or if you will be someplace where temporary relief of symptoms is necessary, then an OTC anti-diarrheal agent could be used. Your physician may be willing to prescribe an antibiotic to take along with you in case you develop severe diarrhea. As with all antibiotics, if you start taking it, complete the full course of therapy. If at any time diarrhea persists, seek medical care.

### C. Biting Arthropods

Mosquitoes are known to transmit nearly 100 viral and parasitic diseases. Preventing their bites may be difficult or impossible. The use of insecticides, mosquito netting and repellents, the wearing of protective clothing, and staying indoors when they are biting are all useful preventive measures.

Sleeping quarters, including the bed covers, should be inspected before retiring. In addition to mosquitoes, ticks, bedbugs, triatomid bugs, rodents, bats, dogs and even serpents may pose a problem in some locations.

### D. Physical Injury

Physical injury may include sunburn, eye strain from exposure to snow or white sandy beaches, bruises, contusions, penetrating wounds, animal bites and, rarely, broken bones. Some injuries may not be preventable, but dangerous situations should be avoided whenever possible. Seat belts should always be used in any vehicle in which they are available.

### E. Dental Heatlh

A dental check-up is essential before leaving the United States, even for a relatively short period of time. The quality of dental care varies in different countries, and in some may not be available at all.

### F. Medical Care Abroad

Those who are traveling or living abroad for extended periods of time may develop illnesses requiring medical care. If this should happen, the U.S. Embassy is often the best place to look for help. It should have a list of American doctors in the country, if there are any, and may know of local doctors who trained in the United States. If board-certified physicians can be identified, they should usually be sought first. Embassy personnel can often recommend doctors with whom they have had good experiences and, conversely, suggest the avoidance of certain others. If no American physician is available, it is useful to contact the British, Canadian, Australian, New Zealand or other English speaking embassy or consulate. Any United States citizen who expects to remain in a foreign country for more than a few days should register with the American embassy so that he/she may be contacted quickly in case of emergency.

### G. General

A small emergency kit containing an antiseptic, some bandages, tape, etc. may be useful. An antihistamine, inhaler, lozenges and other cold medications may be needed. If you are on a cruise and are susceptible to motion sickness, some type of medication to prevent or control this should be included.

## VIDEOCONFERENCES in 2000

The Section of Vaccine-Preventable and Tuberculosis Disease Elimination will sponsor the following Centers for Disease Control and Prevention (CDC) immunization satellite broadcasts:

CORRECTED DATES

### Epidemiology and Prevention of Vaccine-Preventable Diseases

**March 23 and 30, April 6 and 13, 2000 (4-day course)**

This live interactive program will provide the most current information available in the constantly changing field of immunization.
Session 1 will cover principles of vaccination, general recommendations on immunization and strategies to improve immunization coverage levels.
Session 2 will cover diphtheria, tetanus, pertussis, pneumococcal disease (childhood) and polio.
Session 3 will cover measles, mumps, rubella and varicella.
Session 4 will focus on hepatitis B, *Haemophilus influenzae* type b, influenza and pneumococcal disease (adult).

### Preparing for the Next Influenza Pandemic (Part II)

**June 22, 2000**

This program will serve as a follow-up to the 1999 videoconference.
Several states will participate to share their plans for a pandemic situation.

### Immunization Update

**September 14, 2000**

This program will provide the most current information available in the constantly changing field of immunization.

### Surveillance of Vaccine-Preventable Diseases

**December 7, 2000**

This program will provide guidelines for vaccine-preventable surveillance, case investigation and outbreak control.

These live, interactive satellite videoconferences feature question and answer sessions in which participants can address questions to the course instructors on toll-free telephone lines. Continuing education credits will be offered for a variety of professions.

For more information about the courses, site locations and times, contact the immunization representative located in your district health office or the Section of Vaccine-Preventable and Tuberculosis Disease Elimination at (800) 699-2313.

## Withdrawal of Rotavirus Vaccine Recommendation

*(continued from page 4)*
and dehydration. Vaccination against rotavirus would be the optimal means to prevent such illnesses. RRV-TV was recommended because it was shown in prelicensure trials to be a safe and effective vaccine. In those trials, RRV-TV prevented rotavirus in at least 50% of cases of diarrhea and almost all of the hospitalizations. Postlicensure evaluation, however, has identified intussusception as an uncommon, serious adverse event associated with the vaccine.

The relation between intussusception and RRV-TV merits further research. The findings could impact directly on use of this and other rotavirus vaccines. In addition, the worldwide burden of rotavirus disease remains substantial. Thus, the ACIP's decision may not be applicable to other settings, where the burden of disease is substantially higher and where the risks and benefits of rotavirus vaccination could be different.

In the United States, rotavirus remains the primary cause of parents seeking health care for children with severe dehydrating diarrhea, particularly during the winter. Because of the withdrawal of this vaccine recommendation, the ACIP recommends that educational efforts be directed at parents and health-care providers to help parents prevent dehydration and to recognize and immediately seek medical care for severe diarrhea in children. These efforts should focus on the early diagnosis and treatment of severe dehydration from diarrhea, particularly among infants and children aged ≤5 years.

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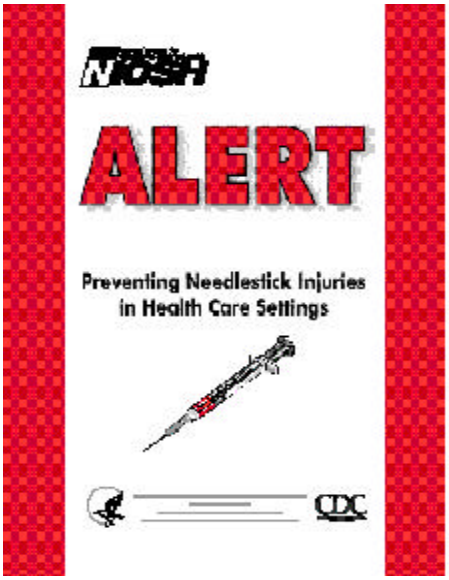
# Preventing Needlestick Injuries in Health Care Settings




The National Institute for Occupational Safety and Health (NIOSH) requests assistance in preventing needlestick injuries among health care workers. These injuries are caused by needles such as hypodermic needles, blood collection needles, intravenous (IV) stylets, and needles used to connect parts of IV delivery systems. These injuries may cause a number of serious and potentially fatal infections with bloodborne pathogens such as hepatitis B virus (HBV), hepatitis C virus (HCV), or human immunodeficiency virus (HIV)—the virus that causes acquired immunodeficiency syndrome (AIDS). These injuries can be avoided by eliminating the unnecessary use of needles, using devices with safety features, and promoting education and safe work practices for handling needles and related systems. These measures should be part of a comprehensive program to prevent the transmission of bloodborne pathogens.

This Alert provides current scientific information about the risk of needlestick injury and the transmission of bloodborne pathogens to health care workers. The document focuses on needlestick injuries as a key element in a broader effort to prevent all sharps-related injuries and associated bloodborne infections. The document describes five cases of health care workers with needlestick-related infections and presents intervention strategies for reducing these risks. Because many needleless devices and safer needle devices have been recently introduced and the field is rapidly evolving, the Alert briefly describes an approach for evaluating these devices.

"Preventing Needlestick Injuries in Health Care Settings," Publication No. 2000-108, is available at no charge by calling (800) 356-4674, or online at **http://www.cdc.gov/niosh/2000-108.html**.

# Missouri Information for Community Assessment (MICA)

*Norma Helmig*
*Bureau of Health Resources Statistics*

The State of Missouri faces serious health issues. Not all health threats impact communities equally. Therefore, to improve the health of the state overall, communities and the state must tailor programs to address problems where they exist, using appropriate public health interventions designed to work in that community.

The Missouri Information for Community Assessment (MICA) system is a breakthrough effort in offering an easy-to-use Internet tool for communities and public health professionals to access health information and data. This interactive system allows users access to health information that may be used in setting policies, guiding health programs and educating policymakers and citizens on their communities' health status.

MICAs are accessible through the Missouri Department of Health's web page at **http://www.health.state.mo.us/MICA/nojava.html**. An individual can follow the simple steps to summarize health data, calculate rates and prepare information in a graphic format for presentation. Users can choose from among the many conditions and generate ad hoc data tables of percents or age-adjusted rates by year of occurrence, age, gender, race or county/zip code of residence.

Presently, the following MICAs are available:

- Births
- Deaths
- Emergency Room Visits
- Hospital Discharges
- Inpatient Procedures
- Motor Vehicle Crash & Outcomes
- Pregnancies
- Preventable Hospitalizations
- All Injuries
- Assault Injuries
- Self-Inflicted Injuries
- Unintentional Injuries
- Physicians (MD or DO)
- Registered Nurses
- Licensed Practical Nurses

The Department of Health also created Community Data Profiles that are accessible through the web site at **http://www.health.state.mo.us/GLRequest/profile.html**. These profiles provide quick and easy access to health data.

Presently, there are community data profiles on thirteen subject areas:

- Cause of Death
- Chronic Diseases
- Economic
- Hospitalization
- Hospitals
- Infectious Disease
- Unintentional Injury
- Maternal, Infant and Child Health
- Medicaid Participation
- Nursing Homes
- Population
- Leading Problems

Each community data profile has data on 15–30 indicators, providing number of events, rate, statistical significance, quintile ranking and the state rate. Each indicator is then linked to a resource page that provides a definition of the indicator, risk factors, condition description, intervention strategies, state and community resources and programs, published reports and other related web sites.

The Department of Health web site is constantly being updated and improved. A future addition planned is an index to help locate information in the MICAs and Community Data Profiles.

Take time to explore the Department of Health web site at http://www.health.state.mo.us. Some of the many other things that can be found there are:

- News Releases
- Meeting Notices
- Job Opportunities
- Requests for Funding
- Integrated Strategic Plan
- Publications
- Resource Material
- Community Health Initiatives
- Rules and Regulations

We welcome your comments in our continuing effort to improve our web site. If you have questions or comments, please call Norma Helmig at (573) 751-6279 or email her at helmin@mail.health.state.mo.us.

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The Managing Editor is H. Denny Donnell, Jr, MD, MPH, State Epidemiologist. Production Manager is Diane C. Rackers. Questions or comments should be directed to (573) 751-6128 or toll free (800) 392-0272.

Alternate forms of this publication for persons with disabilities may be obtained by contacting the Missouri Department of Health, Office of Epidemiology, P.O. Box 570, Jefferson City, MO 65102-0570, Ph: (573) 751-6128. TDD users can access the preceding phone number by calling (800) 735-2966.

## LATE BREAKERS

☞ The Missouri Department of Health is working with the Centers for Disease Control and Prevention to investigate an increase in the rate of blastomycosis cases in the Southeastern Health District of the state. Two Epidemic Intelligence Service (EIS) Officers arrived on January 10, 2000 to begin a joint investigation. Over the past seven years, 20 of the 28 cases identified in Missouri were found in five counties in the Southeastern Health District. For more information, contact the Section of Communicable Disease Control and Veterinary Public Health at (800) 392-0272.

☞ **Influenza Update:** As of January 8, 2000 , there have been 1,210 preliminary confirmed influenza cases reported to the Missouri Department of Health. The predominant strain among the cases reported has been subtyped is A(H3N2), compatible with the A Sydney component of the current vaccine. The number of cases of influenza-like illness reported through the active sentinel surveillance system during the last week of 1999 was only slightly higher than the 10-year average. Weekly influenza reports are now available through the Department of Health web site at **http://www.health.state.mo.us/Influenza/index.html**.

Although influenza occurs every year during the winter months, it is important to report outbreaks of influenza and influenza-like illness that occur in the community and institutional settings. Any outbreak of disease is a category I notifiable disease and is reportable to the Missouri Department of Health or the local public health agency within 24 hours of first knowledge or suspicion, by telephone, FAX or other rapid communication. Confirmed influenza is a category II disease and reportable within three days.

Guidelines for influenza outbreak control in long term care facilities can be found in Section 8 of **Infection Control Guidelines for Long Term Care Facilities**. Section 10 of this publication contains an influenza fact sheet. This publication was recently distributed to long term care facilities in Missouri, and is also available through the department's web site at **http://www.health.state.mo.us/Publications**. If you have questions about influenza, please contact the Section of Communicable Disease Control and Veterinary Public Health at (800) 392-0272.